

AMENDMENTS TO THE CLAIMS

Claim 1 (previously amended) A printer comprising:

- a housing;
- 5 a track installed within the housing;
- a carriage moveably installed on the track;
- a print head installed on the carriage for ejecting ink onto a medium;
- a position detecting mechanism comprising a first portion
- 10 installed at a calibration position neighboring the track, and a second portion installed on the carriage; and
- control circuitry for controlling operations of the printer and recording the calibration position at the track,
- 15 the control circuitry comprising a counter for recording a counted position of the second portion of the position detecting mechanism;
- wherein the calibration position is within a range which the print head is capable of printing the medium, and
- 20 the second portion is capable of passing by the first portion when the print head simultaneously ejects ink onto the medium;
- wherein when printing the medium, if a difference between the position of the second portion corresponding to the
- 25 track recorded by the counter and the position of the calibration position at the track recorded by the control circuitry is within a first predetermined range, the control circuitry does not need to calibrate the position of the carriage.

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Claim 2 (original) The printer of claim 1 wherein the second portion comprises a light source and a light sensor installed

on the carriage, the first portion comprising a shield installed on the housing for shielding light transmitted from the light source to the light sensor.

5 Claim 3 (previously amended) The printer of claim 2 wherein
a first edge of the shield corresponds to a first calibration
position; and when the light source and the light sensor
on the carriage move to the first calibration position which
the shield starts to shield the light transmitted from the
10 light source to the light sensor, the control circuitry
will compare the position of the light source and the light
sensor corresponding to the track counted by the counter
with the first calibration position recorded by the control
circuitry to obtain a first difference of the two positions;
15 wherein a second edge of the shield corresponds to a second
calibration position; and when the light source and the
light sensor on the carriage move to the second calibration
position which the light sensor starts to receive the light
transmitted from the light source again, the control
20 circuitry will compare the position of the light source
and the light sensor corresponding to the track counted
by the counter with the second calibration position recorded
by the control circuitry to obtain a second difference of
the two positions.

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Claim 4 (cancelled).

Claim 5 (original) The printer of claim 1 wherein the first
portion comprises a light source and a light sensor installed
30 on the housing, the second portion comprising a shield
installed on the carriage for shielding light transmitted
from the light source to the light sensor.

Claim 6 (original) The printer of claim 5 wherein the light source and the light sensor correspond to the calibration position of the track; and when a first edge of the shield
5 moves to a position which the shield starts to shield the light transmitted from the light source to the light sensor, the control circuitry will compare the position of the first edge of the shield corresponding to the track counted by the counter with the calibration position recorded by the
10 control circuitry to obtain a difference of the two positions.

Claim 7 (original) The printer of claim 5 wherein the light source and the light sensor correspond to the calibration
15 position of the track; and when a second edge of the shield moves to a position which the light sensor starts to receive the light transmitted from the light source again, the control circuitry will compare the position of the second edge of the shield corresponding to the track counted by
20 the counter with the calibration position recorded by the control circuitry to obtain a difference of the two positions.

Claim 8 (cancelled).
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Claim 9 (previously amended) The printer of claim 1 wherein when printing the medium, if the difference between the position of the second portion corresponding to the track recorded by the counter and the position of the calibration
30 position at the track recorded by the control circuitry is between the first predetermined range and a second predetermined range, the control circuitry will calibrate

the position of the carriage after the medium is printed.

5 Claim 10 (original) The printer of claim 9 wherein when
printing the medium, if the difference between the position
of the second portion corresponding to the track recorded
by the counter and the position of the calibration position
at the track recorded by the control circuitry is greater
than the second predetermined range, the control circuitry
will instantly stop printing the medium to calibrate the
10 position of the carriage.

15 Claim 11 (original) The printer of claim 1 further comprising
a step motor for driving the carriage wherein the counter
counts rotational steps of the step motor to record the
position of the second portion corresponding to the track.

20 Claim 12 (original) The printer of claim 1 further comprising:
a DC motor for driving the carriage;
an optical ruler installed on the housing;
a light source installed on the carriage for emitting light
toward the optical ruler; and
a light sensor for detecting the light emitted by the light
source through the optical ruler and generating
corresponding position signals;
25 wherein the counter uses the position signals generated
by the light sensor to record the position of the second
portion corresponding to the track.

30 Claims 13-19 (cancelled).